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# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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September 2, 2010

TO: Internal File

THRU: Steve Christensen, Team Lead *SICC*  
Jim Smith, Permit Supervisor *JS 210cP2010*

FROM: April A. Abate, Environmental Scientist II *AAA 10-20-2010*

RE: Midterm Permit Review, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/0039, Task #3592

### SUMMARY:

The geology regulations of the coal rules were evaluated for the midterm review of the Dugout Canyon mine. The review consisted of a review of any permit conditions related to geology, a technical field visit, and a review of the mining and reclamation plan (MRP). No special permit conditions regarding geology regulations were found based on the permit approval letter March 11, 2008 (2008\OUTGOING\009).

The technical field visit took place on August 25, 2010. Surface facilities and select degasification well pads were evaluated during the inspection. No deficiencies were noted during the inspection – see Inspection report # 2467.

#### One minor deficiency was noted in the MRP:

**[R645-301-632]:** Please reference or provide the most current subsidence monitoring point location map in Section 632 of the MRP. A subsidence monitoring location map was found in Appendix 5-11 and titled Figure 2; however, please verify that this is the most current map.

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**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724

**Analysis:**

The MRP discusses the geologic setting both the regional and site-specific area of the Dugout Canyon mine. The stratigraphy of the formations in the region is discussed on pages 6-5 through 6-13 in the MRP.

The MRP contains a discussion on acid/toxic materials found on page 6-17 of all the roof and floor materials of each mineable coal seam. The determination of acid and toxic formation materials, as well as whether or not reclamation can be accomplished is addressed.

Information required for a subsidence control plan prepared under R645-301-525 was addressed in Section 624.

Lithologic logs and a chemical analysis were addressed for the acid and toxic forming materials analysis of rock above and below the coal seam as well as the coal seam itself.

**Findings:**

The geologic descriptions of the formations in the region meet the coal rules.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731..

**Analysis:**

The MRP contains a Geology of the Dugout Canyon Permit Area as Plate 6-1 and a corresponding cross section of A – A' that essentially bisects the permit area from north to south as Figure 6-1. Plate 6-1 shows the locations of all exploration boreholes that were drilled and Appendix 6-1 in the confidential binder of the MRP contain well logs for the exploration boreholes showing ground elevations.

A discussion of coal seam geology is found in the MRP on page 6-15. The Gilson and Rock Canyon seams were identified as the mineable seams and the nature and thickness of the seams are discussed.

The MRP contains a map of the coal seams in the Dugout Canyon Mine portal area shown as Plate 6-2. The maps depicts the text in the MRP describe the geology down to and below the stratum immediately below the coal seam.

**Findings:**

The information described above and contained in the MRP meets the R645-301-600 Coal Rules

**OPERATION PLAN**

**MINING OPERATIONS AND FACILITIES**

Regulatory References: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

**Analysis:**

The operational plan requires that exploration holes be sealed unless otherwise approved for another use approved by the Division. The majority of the exploration boreholes that were drilled were completed prior to the original permit approval for the Dugout Mine in 1998. Moreover, most of these wells were drilled in the mid 1960s and early 1970's prior to the inception of SMCRA. Therefore, well plugging data were not available. According to the operator, one of the exploration wells, 24-1 has been converted to a monitoring well.

Dugout also has a series of degasification wells installed designed to vent elevated levels of methane gasses. These wells have typically been permitted by the Division over the last few years - either individually or in a group. Once the wells are no longer needed, a timetable shown in attachment 5-2 shows the year they are to be reclaimed. A field inspection conducted on August 25, 2010 verified that Dugout is proactively reclaiming these well sites and staying on schedule with their timeline. Surface facilities and features also were evaluated and no deficiencies or violations were identified.

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## **SUBSIDENCE MONITORING**

Regulatory Reference: R645-301-625, 632

Subsidence monitoring is referenced in this section of the MRP as being located under R645-301-525. However, there was no reference in the MRP to a map showing the locations of subsidence monitoring points. A map depicting subsidence monitoring points was located in Appendix 5-11 within a technical report dated 2006 and referenced as Figure 2. If this is the most current subsidence monitoring point location map, it should be referenced in Section 632 of the MRP.

## **PERFORMANCE STANDARDS**

Regulatory References: R645-301-640

The performance standards regarding exploration holes and boreholes and the reclamation of surface markers and monuments are addressed in the MRP on page 6-19.

### **Findings:**

There were no deficiencies identified during the technical field visit on August 25, 2010.

Please reference or provide the most current subsidence monitoring point location map in Section 632 of the MRP. A subsidence monitoring location map was found in Appendix 5-11 and titled Figure 2; however, please verify that this is the most current map.

### **RECOMMENDATIONS:**

The midterm is not recommended for approval.

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